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Fertility, reproductive health and development

Report of the Secretary-General

Summary

The present report was prepared in response to decision 2009/101 of the Commission on Population and Development, in which the Commission decided that the theme for its forty-fourth session, in 2011, should be "Fertility, reproductive health and development". The report shows that reductions in fertility can contribute to development and concludes, by looking at the diverse experiences of low-fertility, intermediate-fertility and high-fertility countries, that high-fertility countries tend to score poorly in most outcomes related to reproductive health. In the report, different aspects of reproductive health are addressed, focusing on ways to accelerate the achievement of the relevant goals and objectives of the Programme of Action of the International Conference on Population and Development. The main conclusion is that ensuring universal access to reproductive health-care services and, in particular, meeting the need for family planning, can accelerate the improvement of maternal and child health, especially in high-fertility countries, and thereby slow fertility rates, a decrease that can, in turn, be beneficial for development.

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I. Introduction

1. Global fertility, measured as the average number of children women would bear at current fertility rates, has declined markedly, dropping from 4.9 children per woman in 1950 to an estimated 2.5 in 2005-2010. A decline in fertility in developing countries, where the total fertility rate fell from 6.0 to 2.6 children per woman between 1950-1955 and 2005-2010, is the major reason for this reduction. However, fertility rates also dropped in developed countries, from 2.8 children per woman in the 1950s to 1.6 today. Both the rapid reduction in fertility in developing countries that started in the late 1960s and the persistence of low fertility in developed countries since the 1970s are unprecedented in human history. These developments have occurred in a context of rapid technological innovation and societal change in which the increasing availability of effective contraceptive methods has been crucial. Today, 56 per cent of all women of reproductive age who are married or in a union use modern contraceptive methods and 9 out of 10 developing country Governments provide direct support to family planning programmes.

2. Reductions in fertility have important implications for development, both at the national level and for the well-being of families and individuals. The lives of women can change dramatically depending on whether they can or cannot control when and how many children they have. Lower fertility enables women to increase their level of education, participate in the labour force and devote more attention to each child. Increasing the intervals between births reduces the mortality of young children and allows mothers to recuperate from pregnancy. Reducing the number of pregnancies also reduces the lifetime probability of dying of maternity-related causes. Having fewer children allows families and society to invest more in each child. Improvements in child nutrition, health and education can be achieved more easily when there are fewer children to compete for the resources and services available.

3. Declining fertility slows population growth and induces beneficial changes in the age distribution of a population by ushering in a period when the number of potential workers grows faster than the number of dependants. These changes can boost savings, leading to a "demographic bonus". Countries that have used those savings to increase investment and generate more jobs during that period and that have invested more in the health and education of children have reaped benefits in terms of economic growth and human development. It is estimated that the medium-term effects of fertility reductions on economic growth in both developed and developing countries accounted for about 20 per cent of per capita output growth between 1960 and 1995.[1]

4. Declining fertility and development interact. There has long been a debate about whether successful development leads to fertility decline or fertility decline fosters development. The evidence indicates that both statements have validity because there are important feedback mechanisms between fertility decline and development. The impact of fertility on development has been outlined above. That fertility levels are influenced by development is indicated by the good first approximation provided by a model relating key development indicators to fertility trends in 87 developing countries.[2] However, development indicators are not the

[1] Allen Kelley and Robert Schmidt, "Evolution of recent economic-demographic modelling: a synthesis", *Journal of Population Economics*, vol. 18, No. 2 (June 2005).

[2] John Bryant, "Theories of fertility decline and evidence from development indicators", *Population and Development Review*, vol. 33, No. 1 (2007).

only factors affecting fertility, as suggested by the fact that the onset of fertility decline in developing countries and countries in the developed world has occurred at varying levels of development. That is, there is no fixed development threshold necessary for fertility to start declining.

5. Social dynamics also influence fertility trends. The analysis of fertility decline in nineteenth-century Europe has shown that such a decline was driven by a diffusion process, whereby novel ideas and modes of behaviour spread through social networks. The steps involved in adopting contraception, which include becoming aware of the possibilities that contraception offers, acquiring information, evaluating options, trying one or several contraceptive methods and, lastly, becoming a committed practitioner, imply that social learning and social influence are important aspects of the process. Consequently, all successful family planning programmes incorporate key communication and outreach components aimed at raising awareness, validating behavioural change and increasing familiarity with and confidence in the use of contraception. Diffusion processes, driven by social influence, social emulation and social learning, are an important part of the explanation for why there have been substantial declines in fertility in countries with low development indicators.

6. Government policy has also had an important influence on fertility trends. Policies affecting fertility can be either direct or indirect. Direct policies focus mainly on the proximate determinants of fertility, such as the age at marriage, the promotion of and support for contraception and the provision of child allowances. Indirect policies are those that, while not aimed at influencing fertility, nevertheless change the incentive structure influencing parental decisions on the number of children desired. Such policies include the provision of old-age pensions, incentives for women to join the labour force and policies that reward higher educational attainment with better economic prospects, which provide parents with an incentive to invest more in each child.

7. Because the factors that have triggered fertility reductions and shaped the ensuing decline are complex and interact both among themselves and with the effects of declining fertility, there is no all-encompassing and unique explanation for why fertility has declined as fast as it has in developing countries nor for why fertility has, in many countries, dropped to levels that are resulting in or will result in population reductions. Nevertheless, today, nearly four decades after fertility started to decline in developing countries, fertility levels are negatively correlated with development indicators, so that countries with higher fertility rates tend to have lower per capita incomes, higher levels of poverty, lower educational attainment, higher mortality and lower urbanization. Similarly, within countries, higher fertility levels characterize those segments of the population that are at the lower levels of the human development distribution. Thus, in 56 developing countries studied over the past decade, women in the lowest wealth quintile had, on average, two children more than women in the upper quintile.[3] In Africa, the difference was greater, at 2.8 children, and in Latin America and the Caribbean it was greater still, at 3.8 children. Similar differences exist when the education of women is the differentiating factor because educational attainment and wealth are highly correlated. Analyses of the impact of declining fertility on poverty reduction have

[3] Davidson R. Gwatkin and others, *Socio-Economic Differences in Health, Nutrition and Population within Developing Countries: An Overview* (World Bank, Washington, D.C., 2007).

shown that demographic change alone accounted for a 14 per cent drop in poverty levels in the developing world during the period from 1960 to 2000 and could produce an additional 14 per cent reduction in the 2000 to 2015 period should the decline in fertility in high-fertility countries accelerate.[4]

8. Consequently, reducing high fertility rates at both the national and household levels can contribute to reducing poverty. The more rapidly the size of the population living in poverty increases, the larger that share of the population will be. It is estimated that the higher rate of natural increase among people living on less than $1 a day put upward pressure on poverty levels equivalent to between 10 and 50 per cent of the rate of poverty reduction in the developing world between 1990 and 2001.[5] This effect was largest for Africa and South Asia.

9. The fertility trends of the past four decades have been underpinned by the universal recognition of the right of couples and individuals to decide freely and responsibly the number and spacing of their children and to have the information, education and means to make such decisions. That right was first set out in the Proclamation of Tehran of 1968[6] and then reiterated at the first intergovernmental conference on population, the World Population Conference, held in Bucharest from 19 to 30 August 1974. In 1994, the participants in the International Conference on Population and Development spelled out the implications of that right within the broader framework of health and well-being, thus raising the issues of sexual and reproductive health and reproductive rights. In principle 8 of its Programme of Action, the Conference established the following:

> Everyone has the right to the enjoyment of the highest attainable standard of physical and mental health. States should take all appropriate measures to ensure, on a basis of equality of men and women, universal access to health-care services, including those related to reproductive health care, which includes family planning and sexual health. Reproductive health-care programmes should provide the widest range of services without any form of coercion. All couples and individuals have the basic right to decide freely and responsibly the number and spacing of their children and to have the information, education and means to do so.

10. The present report documents trends in and the proximate determinants of fertility, as well as the main challenges in ensuring universal access to reproductive health services, with a view to providing guidance on how to accelerate the achievement of the goals and objectives contained in the Programme of Action, especially those related to reproductive health and the empowerment of women, and the targets related to maternal health that are part of the Millennium Development Goals.

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[4] Andrew Mason and Sang-Hyop Lee, "The demographic dividend and poverty reduction" in *Proceedings of the Seminar on the Relevance of Population Aspects for the Achievement of the Millennium Development Goals*, United Nations, New York, 17-19 November 2004.

[5] Martin Ravaillon, "On the contribution of demographic change to aggregate poverty measures for the developing world", World Bank Policy Research Working Paper, No. 3580 (Washington, D.C., World Bank, April 2005).

[6] See *Final Act of the International Conference on Human Rights* (United Nations publication, Sales No. E.68.XIV.2).

II. Fertility today[7]

11. Fertility rates have declined in virtually all countries, but the timing and speed of the decline have varied considerably across countries. Consequently, today's fertility levels are varied. Among the 196 countries or areas with at least 100,000 inhabitants in 2005, 75 had fertility rates below the replacement level, 61 had an intermediate level of fertility and 60 had high fertility rates. Fertility rates are at the replacement level when every woman has exactly one daughter to replace her. Because more boys are born than girls and because women have to survive to reproductive age in order to have children, the number of children women have to bear to have one girl is, on average, higher than two. The net reproduction rate is the average number of daughters that women have at current levels of fertility and mortality. A net reproduction rate lower than 1 implies that fertility is below the replacement level. Intermediate fertility is taken to mean a rate ranging from 1.0 to 1.5 daughters per woman, implying that the next generation will increase by at most 50 per cent. Higher rates are considered a reflection of high fertility.

12. Figure I shows the net reproduction rate of countries during the period from 2005 to 2010. Every major region of the world includes countries with low, intermediate and high net reproduction rates. Europe is the most homogeneous region, as Iceland is the only country that is not in the low-fertility category. Africa is the second most homogeneous region, as 39 of its 55 countries have high rates of fertility. In Africa, intermediate fertility rates are concentrated in North and Southern Africa, but are also found in Cape Verde, Gabon, Réunion and Zimbabwe. Africa also has two low-fertility countries: Mauritius and Tunisia.

Figure I
Countries according to fertility level, 2005-2010

Note: The boundaries shown on this map do not imply official endorsement or acceptance by the United Nations.

[7] All estimates cited in this chapter are from *World Population Prospects: The 2008 Revision*, extended dataset (United Nations publication, Sales No. 09.XII.6).

13. In Oceania, half the countries have high rates of fertility, including Papua New Guinea, one of the most populous countries in the region; in Australia and New Zealand, however, fertility rates are low. In the Americas and Asia, the majority of countries have intermediate fertility levels. In the Americas, only Bolivia (Plurinational State of), Guatemala, Haiti, Honduras and French Guiana have high fertility levels. In Asia, high fertility rates can be found in Afghanistan, Iraq, the Lao People's Democratic Republic, Pakistan, Saudi Arabia, the Syrian Arab Republic, Tajikistan, Timor-Leste, Yemen and the Occupied Palestinian Territory. In both Asia and the Americas, many countries have low fertility rates: 19 of 50 in Asia (including Armenia, Azerbaijan, China, Cyprus, the Democratic People's Republic of Korea, Georgia, Iran (Islamic Republic of), Japan, Lebanon, Mongolia, Myanmar, the Republic of Korea, Thailand and Viet Nam) and 13 of 39 in the Americas (Brazil, Canada, Chile and Costa Rica, and nine countries in the Caribbean).

14. Among the least developed countries, 40 have high fertility rates, five have intermediate fertility rates and one has a low fertility rate (Myanmar). Among the other developing countries, 20 have high fertility rates, 54 have intermediate fertility rates and 31 have low fertility rates. Among the developed countries, all but two have low fertility rates. Iceland and the United States of America are the exceptions because their current fertility levels are just slightly above the replacement level. Clearly, fertility levels vary markedly and there are enough cases of countries with low levels of development and relatively low levels of fertility to suggest that development is not necessary for fertility to decline.

15. The global population is almost equally distributed among low-fertility countries (42 per cent) and intermediate-fertility countries (41 per cent). High-fertility countries account for 17 per cent of the world population. Even assuming significant fertility declines in the high-fertility countries and the attainment of low fertility by all countries that still have intermediate fertility, by 2050 today's high-fertility countries are projected to account for 26 per cent of the world population, those with intermediate fertility to continue to represent 41 per cent and those with low fertility to account for 33 per cent.

16. In high-fertility countries the overall fertility rate varies from 3.2 to 7.1 children per woman. For intermediate-fertility countries, the range is from 2.1 to 3.6 children per woman, and for low-fertility countries it is from 1.0 to 2.3. The overlap of those ranges is caused by differences in mortality. Myanmar, for instance, has a total fertility of 2.3 children per woman, which is below the replacement level because the country's mortality is higher than in developed countries. Similarly, Zimbabwe belongs to the intermediate-fertility category (3.5 children per woman) because its mortality is higher than that of Saudi Arabia, which, having a fertility rate of 3.2 children per woman, belongs to the high-fertility category. In the analysis below, these classification issues should be borne in mind, together with the fact that the net reproduction rate is a better indicator of potential population growth or decline than total fertility.

III. Marriage

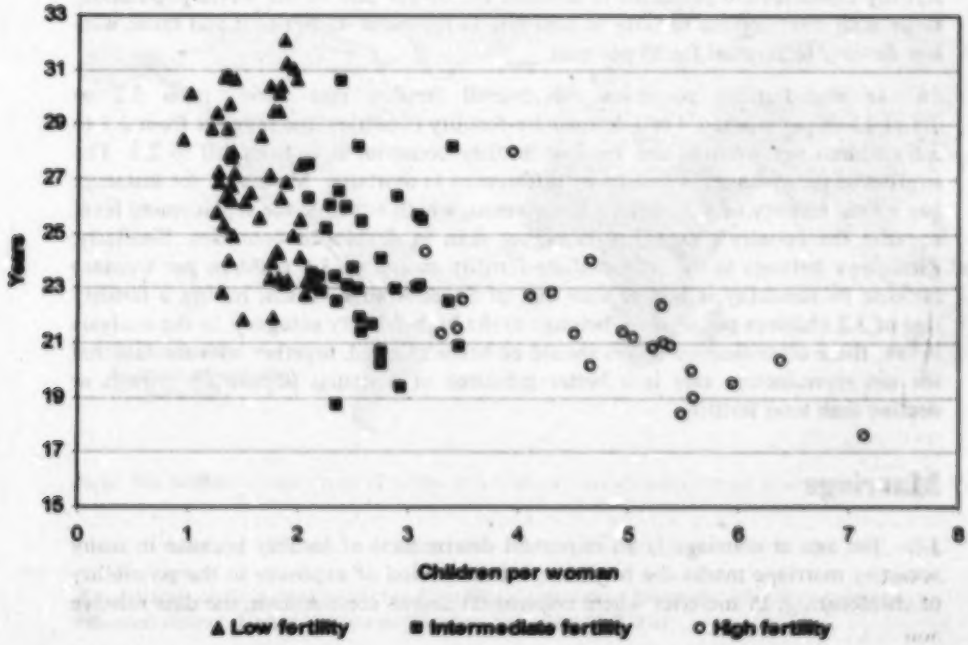
17. The age at marriage is an important determinant of fertility because in many societies marriage marks the beginning of the period of exposure to the possibility of childbearing. In societies where consensual unions are common, the data relative

to married persons usually include those for people in such unions, whether they are married or not. However, in countries where marriage is being increasingly postponed because young couples opt instead to live together in informal partnerships, the data do not reflect this development properly.

18. In many countries, the rising age at marriage has contributed to the reduction of fertility because marrying at a later age effectively shortens the reproductive life of women. In societies where marriage occurs at a very young age, women are prevented from remaining in school or acquiring job-related skills, which in turn hinders their empowerment. For that reason, most countries have established minimum ages of marriage for both women and men, although exceptions are generally granted with parental approval.

19. In most countries, the singulate mean age at marriage, or the average number of years that people who marry by the age of 50 are single, has increased. Between 1990 and 2005, that age decreased in just 16 of 111 countries for which data were available. Increases in the age tended to be higher in low-fertility countries than in intermediate-fertility countries, which, in turn, tended to record higher increases than the high-fertility countries. In 2005, the singulate mean age at marriage in high-fertility countries was considerably lower than in countries in the other two groups (see figure II). The median singulate mean age at marriage was 21.3 years in high-fertility countries, 23.4 years in intermediate-fertility countries and a high 26.9 years in low-fertility countries. Between 1990 and 2005, the median had increased by three years in low-fertility countries and by one year in both high- and intermediate-fertility countries.

Figure II
Estimated singulate mean age at marriage in 2005 compared with total fertility, 2005-2010



20. Higher fertility is associated with lower singulate mean ages at marriage, especially in high-fertility countries. In 2005, that age was below 21 years in just 14 countries and most countries had fertility levels well above three children per woman. The exceptions were Bangladesh, Guatemala, India and Nepal, whose total fertility ranged from 2.4 children per woman in Bangladesh to just under 3.0 in Nepal. In Bangladesh, fertility has declined markedly even though the singulate mean age at marriage has remained low (18.7 years in 2005). Among high-fertility countries, the age was lowest (17.6 years) in the Niger, the country with the highest fertility (7.2 children per woman).

21. In low-fertility countries (1.0-2.3 children per woman), the singulate mean age at marriage varied from 21.9 in the Republic of Moldova to 32.1 years in Sweden. By 2005, there were 11 low-fertility countries where the age was above 30 years, whereas in 1990 there was only one (Sweden). The age tends to be higher in Western and Northern European countries than in countries in Eastern Europe or in the developing world. However, for some European countries, the high singulate mean age at marriage reflects only formal marriage and excludes stable partnerships.

22. Another indicator of changes in marriage patterns is the percentage of women in certain age groups who have been married at some point in their lives. Data for the period from 2000 to 2008 for 146 countries show that, in half of the 62 low-fertility countries for which data were available, less than 60 per cent of women aged 25-29 had ever been married. That percentage was particularly low in Denmark, France, Ireland, the Netherlands, Slovenia and Sweden, where it ranged from 22 to 30 per cent. However, in several of those countries, stable partnerships were not reflected in the data.

23. In contrast with low-fertility countries, the percentage of women aged 25-29 who had been married at one time or another surpassed 80 per cent in 32 of the 41 high-fertility countries for which data were available and was higher than 70 per cent in 24 of the 43 intermediate-fertility countries for which data were available.

24. In most societies, the majority of women marry by the age 35. Nonetheless, the data available show that in 21 low-fertility countries (including Australia, Belgium, Denmark, Finland, France, Germany, Hungary, Ireland, Italy, Japan, Latvia, Lebanon, the Netherlands, Slovenia, Spain and Sweden) and in 5 intermediate-fertility countries (Algeria, Botswana, Cape Verde, Namibia and South Africa) over 30 per cent of women have never been married. In societies where consensual unions are not condoned and therefore do not substitute for marriage, the high percentage of women who remain single is a major factor contributing to low fertility.

25. In sum, the prevalence and timing of marriage vary widely. In high-fertility countries, the mean ages at marriage tend to be low and most women marry. Increasing the age at marriage, particularly in societies where it is still below 21 or 22 years, can contribute not only to reducing fertility but also to empowering women by facilitating their education and training for employment. In societies with low fertility rates, where marriage is increasingly being postponed or substituted by informal but stable partnerships, providing incentives for couples to marry may be in order. The nature of such incentives will vary from one society to another and are likely to involve better job opportunities for young people and access to affordable housing.

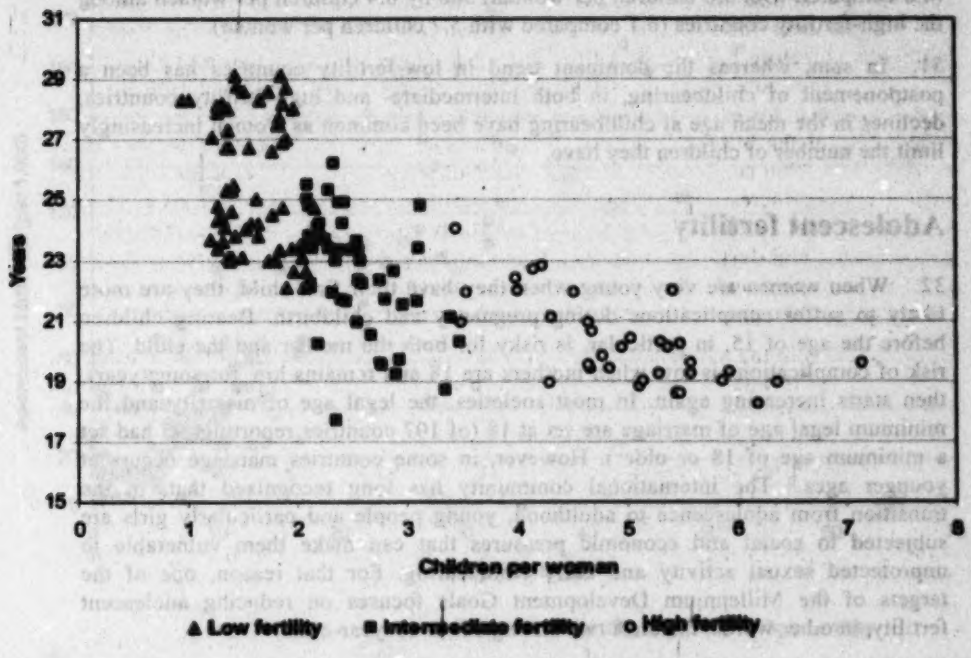
IV. Timing of childbearing

26. Although the timing of marriage is a useful indicator of when exposure to the possibility of childbearing starts, the mean age at which women bear their first child provides a better indicator of the start of their reproductive period. The longer women wait before having their first child, the shorter the effective reproductive period and the more likely it is that women will have few children during their lifetime. Hence, lower fertility is often associated with a woman's higher mean age at the time of the birth of her first child. Estimates referring to the 1970s and to dates around 2000 confirm that the mean age[8] of women at the time of the birth of their first child increased in 48 of the 50 low-fertility countries for which data were available and in 19 of the 24 intermediate-fertility countries. Similar data were not available for high-fertility countries, but comparisons of cohort measures derived from demographic and health surveys suggest that the mean age at first birth has increased over the past decade in 17 of 26 high-fertility countries.

27. Increases in the mean age at first birth have tended to be higher in low-fertility countries than in intermediate-fertility countries, which in turn appear to have had higher increases on average than in high-fertility countries. Consequently, differences in the time at which women give birth to their first child among the three groups of countries are marked (see figure III). According to the most recent data for each country, which refers mostly to the late 1990s, women in high-fertility countries had their first child at much younger ages than those in low-fertility countries: of the 34 high-fertility countries for which data were available, all but Tajikistan showed that the mean age at first birth was below 23 years, whereas of the 60 low-fertility countries, all but 4 (Brazil, Costa Rica, Maldives and Viet Nam) showed mean ages at first birth of at least 23 years. Among the low-fertility countries, the mean age at first birth tended to be lower in the countries of East and South-East Asia, Latin America and the Caribbean and Eastern Europe than in those in other parts of Europe or Asia. Spanish women had the highest mean age at first birth (29 years).

[8] For some countries, the estimates available refer to the median age at first birth.

Figure III
Estimated mean age at first birth for the most recent date available compared with total fertility, 2005-2010



28. The mean ages at first birth in the 46 intermediate-fertility countries for which data were available overlap with the ranges for both the low- and the high-fertility countries, with women in 23 intermediate-fertility countries having mean ages at first birth lower than 23 years and women in 4 of those countries (Bahrain, Iceland, Sri Lanka and United States) having mean ages of 25 years or higher. Bangladesh, which has a total fertility of 2.4 children per woman, stands out as an intermediate-fertility country where the mean age at first birth is very low (17.7 years).

29. Increases in the mean age at first birth indicate that women are postponing childbearing, thus reducing the total period of fertility. The very low fertility levels recorded in some countries, especially in the early 2000s, are partly the result of postponement. The recent increases in total fertility in several of those countries suggest that women have stopped postponing childbirth, but the data on the timing of first births presented here do not yet reflect that change.

30. Fertility usually starts to decline when couples limit the number of children they have, that is, when women stop having children earlier than they would have done otherwise. Consequently, fertility rates drop at older ages and the mean age at childbearing declines. Between 1995 and 2005, the mean age at childbearing decreased in 25 of the 53 intermediate-fertility countries and in 26 of the 49 high-fertility countries for which data were available, indicating that the limitation of childbearing was ongoing. In countries where the mean age at childbearing declined, the median decline was 0.8 years per decade in intermediate-fertility countries and 0.5 years per decade in high-fertility countries. Countries in which women's mean

age at childbearing declined tended to have higher fertility rates than those in which women's mean age at childbearing increased: their median total fertility levels differed by 1 child per woman among the intermediate-fertility countries (4.0 compared with 3.0 children per woman) and by 0.4 children per women among the high-fertility countries (6.1 compared with 5.7 children per woman).

31. In sum, whereas the dominant trend in low-fertility countries has been a postponement of childbearing, in both intermediate- and high-fertility countries, declines in the mean age at childbearing have been common as women increasingly limit the number of children they have.

V. Adolescent fertility

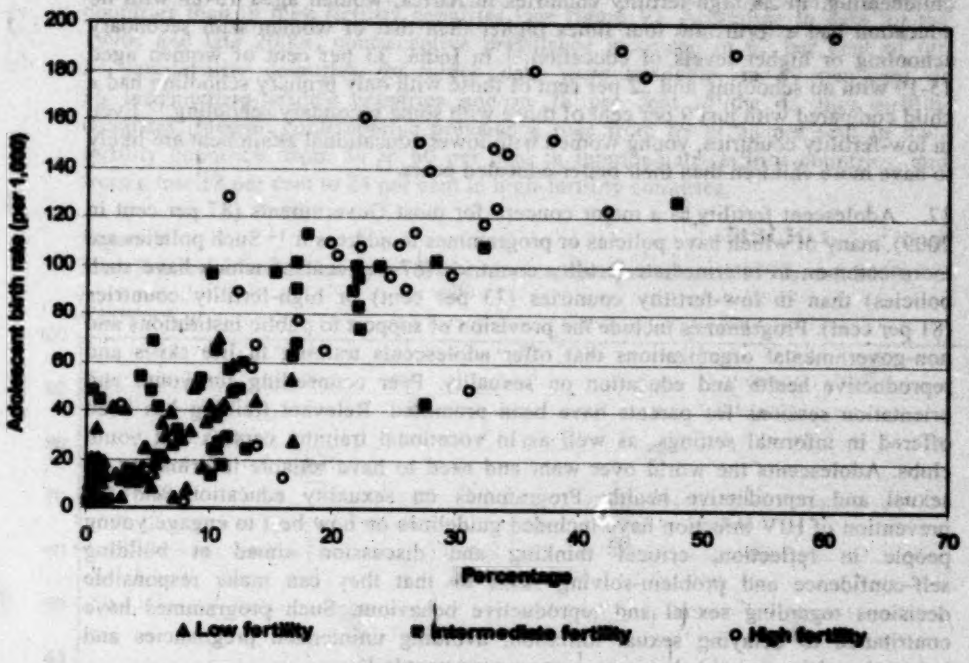
32. When women are very young when they have their first child, they are more likely to suffer complications during pregnancy and childbirth. Bearing children before the age of 15, in particular, is risky for both the mother and the child. The risk of complications is low when mothers are 18 and remains low for some years, then starts increasing again. In most societies, the legal age of majority and the minimum legal age of marriage are set at 18 (of 107 countries reporting, 95 had set a minimum age of 18 or older). However, in some countries marriage occurs at younger ages.[9] The international community has long recognized that, in the transition from adolescence to adulthood, young people and particularly girls are subjected to social and economic pressures that can make them vulnerable to unprotected sexual activity and early childbearing. For that reason, one of the targets of the Millennium Development Goals focuses on reducing adolescent fertility, in other words, the birth rate among 15- to 19-year-olds.[10]

33. The adolescent fertility rate is highly correlated with the percentage of women aged 15-19 who have been married or have lived in a consensual union (see figure IV). In most countries where at least a quarter of women aged 15-19 have been married, the adolescent fertility rate is higher than 100 births per 1,000 women. Thus, in half of the 36 high-fertility countries for which data are available, the percentage of women aged 15-19 who have been married surpasses 25 per cent and in all but 3 of those countries, the adolescent fertility rate is above 100 births per 1,000 women aged 15-19. Of the 48 intermediate-fertility countries for which data were available, only in 4 have more than a quarter of women aged 15-19 ever been married; in 3 (Bangladesh, Nepal and Nicaragua) the adolescent fertility rates are above 100 births per 1,000 women aged 15-19.

[9] At least 12 countries have a minimum legal age at marriage lower than 18. It is 17 in Armenia, Azerbaijan, Guinea, Israel, Togo, Ukraine and Uzbekistan; 16 in Malta, Pakistan and Romania; 15 in Cameroon; and 14 in the Plurinational State of Bolivia.

[10] This age range was selected on the basis of available data and is not ideal for measuring the incidence of childbirth among underage women.

Figure IV
Estimated adolescent fertility rate in 2005 compared with the percentage of women aged 15-19 who have been married, for the most recent date available



34. The adolescent fertility rate is generally low in low-fertility countries, partly because very few women aged 15-19 are married. In three quarters of the 60 low-fertility countries for which data are available, no more than 7.3 per cent of women in that age group have ever been married. The highest adolescent fertility rate in low-fertility countries is 70 births per 1,000 women aged 15-19, but three quarters of the low-fertility countries have adolescent fertility rates lower than 30 per 1,000. In contrast, three quarters of the high-fertility countries have adolescent fertility rates higher than 63 births per 1,000 women and half of the intermediate-fertility countries have adolescent fertility rates above 49 per 1,000.

35. Between 1990 and 2005, the adolescent fertility rate declined in all but 25 of the 177 countries for which data were available. In relative terms, such declines were generally smaller in high-fertility countries than in intermediate-fertility countries, and these, in turn, tended to be smaller than in low-fertility countries. Because in at least half of the high-fertility countries and about a quarter of intermediate-fertility countries, the proportion of women aged 15-19 who have been married is relatively high, reductions in the adolescent birth rate may hinge on reducing the propensity to marry at a young age. In addition, ensuring that married young women have access to reproductive health services should be a priority. In countries where the adolescent fertility rate is relatively high despite the fact that almost no women aged 15-19 have been married, ensuring that single young women have access to reproductive health programmes should be part of any strategy to reduce adolescent fertility rates.

36. Increasing the level of educational attainment of girls is another important way to reduce the incidence of early marriage and adolescent fertility rates. When adolescents stay in school longer they are more likely to defer marriage and childbearing. In 24 high-fertility countries in Africa, women aged 15-19 with no education had a birth rate four times higher than that of women with secondary schooling or higher levels of education.[11] In India, 33 per cent of women aged 15-19 with no schooling and 22 per cent of those with only primary schooling had a child compared with just 9 per cent of those with some secondary schooling.[12] Even in low-fertility countries, young women with lower educational attainment are likely to have more children than their better-educated peers.[13]

37. Adolescent fertility is a major concern for most Governments (87 per cent in 2009), many of which have policies or programmes to address it.[14] Such policies are more common in intermediate-fertility countries (87 per cent of which have such policies) than in low-fertility countries (73 per cent) or high-fertility countries (81 per cent). Programmes include the provision of support to public institutions and non-governmental organizations that offer adolescents training in life skills and reproductive health and education on sexuality. Peer counselling for youth and orientation sessions for parents have been promoted. Relevant training has been offered in informal settings, as well as in vocational training centres and youth clubs. Adolescents the world over want and need to have reliable information on sexual and reproductive health. Programmes on sexuality education and the prevention of HIV infection have included guidelines on how best to engage young people in reflection, critical thinking and discussion aimed at building self-confidence and problem-solving skills so that they can make responsible decisions regarding sexual and reproductive behaviour. Such programmes have contributed to delaying sexual initiation, avoiding unintended pregnancies and preventing risky sexual behaviour among young people.[15]

VI. Contraceptive use and the unmet need for family planning

38. The use of contraception, particularly modern methods, is the usual means by which couples and individuals exercise control over the number of children they have. Since modern contraceptives were introduced in the 1960s, their use among people who are married or living in a consensual union has increased markedly, particularly in populations where total fertility has dropped. Contraceptive prevalence, measured as the percentage of women aged 15-49 who are married or in a union and who use some method of contraception, averaged 72 per cent in developed countries and 61 per cent in developing countries in 2009; among

[11] *The Millennium Development Goals Report 2010* (United Nations publication, Sales No. E.10.I.7).

[12] Demographic and Health Surveys StatCompiler 2010 (available from www.statcompiler.com).

[13] Susheela Singh and others, "Socioeconomic disadvantage and adolescent women's sexual and reproductive behavior: the case of five developed countries", *Family Planning Perspectives*, vol. 33, No. 6 (2001).

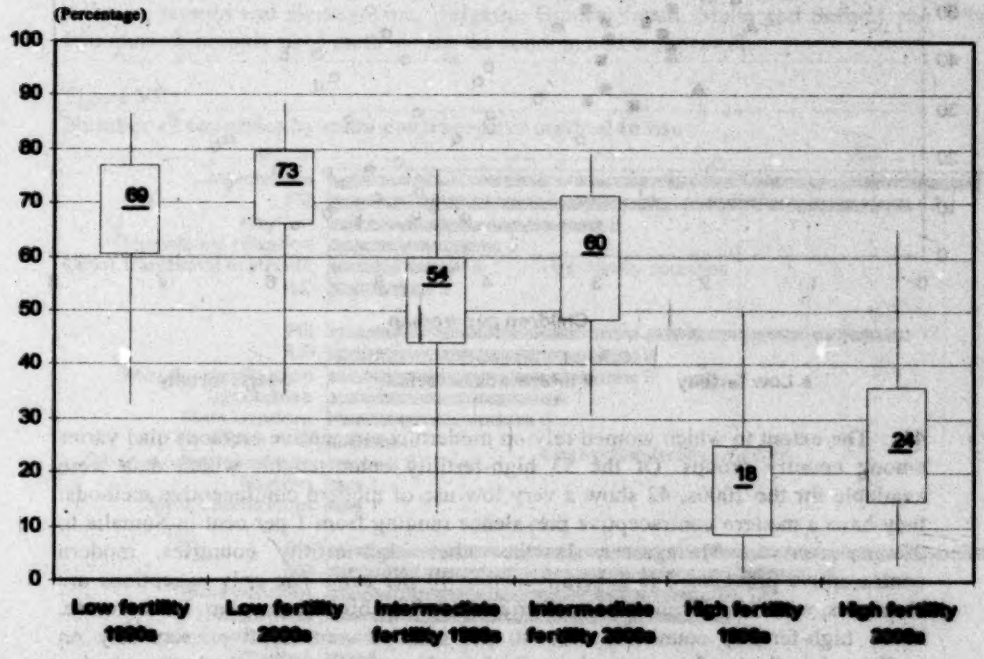
[14] *World Population Policies 2009* (United Nations publication, Sales No. E.09.XIII.14).

[15] United Nations Population Fund, *Sexual and Reproductive Health for All: Reducing Poverty, Advancing Development and Protecting Human Rights* (available from http://www.unfpa.org/webdav/site/global/shared/documents/publications/2010/uarh_report_2010.pdf).

contraceptive users, those relying on modern methods of contraception constituted 85 per cent of users in developed countries and 90 per cent in developing countries.

39. Contraceptive prevalence tends to be higher in low- and intermediate-fertility countries than in high-fertility countries (see figure V). According to data for the 1990s and late 2000s, contraceptive prevalence increased in 62 per cent of the 34 low-fertility countries for which data were available, in 89 per cent of 36 intermediate-fertility countries and in 78 per cent of the 45 high-fertility countries. Median contraceptive prevalence rose from 69 to 73 per cent in low-fertility countries; from 54 to 60 per cent in intermediate-fertility countries; and from a low 18 per cent to 24 per cent in high-fertility countries.

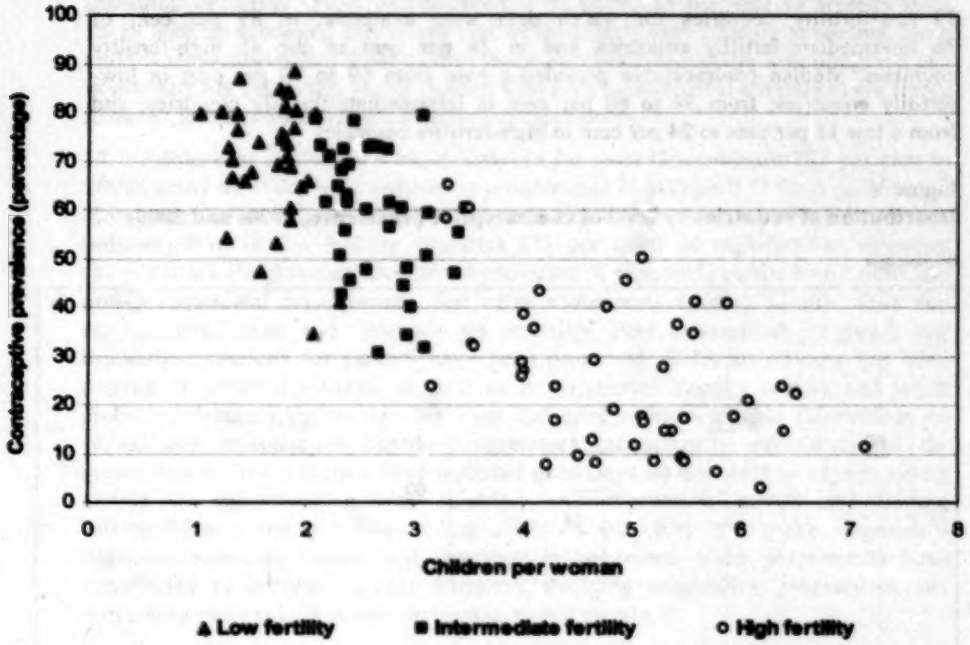
Figure V
Distribution of countries by level of contraceptive prevalence, 1990s and 2000s



40. Although most high-fertility countries for which data are available still have very low contraceptive prevalence, in 15 of them contraceptive prevalence has surpassed 30 per cent and in four it is above 50 per cent. Among intermediate-fertility countries, 72 per cent have contraceptive prevalence higher than 50 per cent and a similarly high contraceptive prevalence is common among low-fertility countries (91 per cent have a level surpassing 50 per cent). In general, lower contraceptive prevalence is associated with higher fertility but, as shown in figure VI, for a given level of total fertility, there is considerable variation in contraceptive prevalence. Among countries with an estimated total fertility ranging from 1.0 to 3.0 children per woman, in particular, contraceptive prevalence varies from a low of 31 per cent in Bhutan to a high of 88 per cent in Norway. This variation implies that factors other than overall contraceptive prevalence are important in determining fertility levels, including the effectiveness of the methods

used, the prevalence of marriage, divorce and separation, the incidence of childbearing outside marriage and the incidence of abortion.

Figure VI
Most recent level of contraceptive use compared with total fertility, 2005-2010

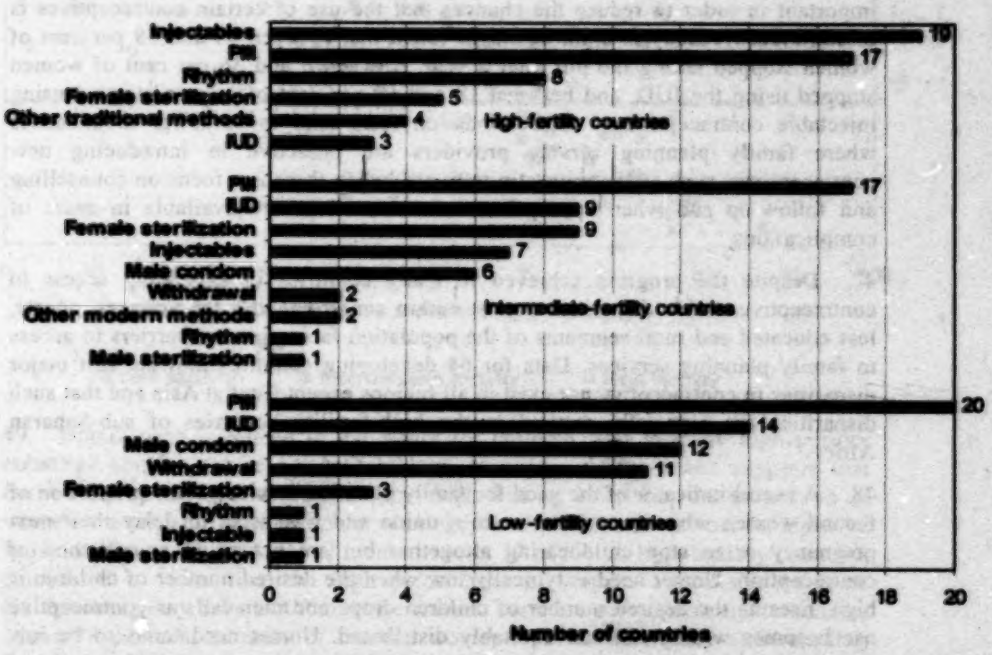


41. The extent to which women rely on modern contraceptive methods also varies among country groups. Of the 53 high-fertility countries for which data were available for the 2000s, 42 show a very low use of modern contraceptive methods: they have a modern contraceptive prevalence ranging from 1 per cent in Somalia to 28 per cent in Madagascar. In the other high-fertility countries, modern contraceptive prevalence is generally below 40 per cent. The only exceptions are Honduras, with 56 per cent, and the Syrian Arab Republic, 48 per cent. Furthermore, in 11 high-fertility countries, over 40 per cent of contraceptive users rely on traditional methods of contraception, which are less effective than modern methods.

42. Compared to women in high-fertility countries, women in intermediate-fertility countries are more likely to use modern contraceptive methods. Modern contraceptive prevalence is above 30 per cent in 40 of the 43 intermediate-fertility countries for which data are available; only in 1 intermediate-fertility country, Gabon, do more than 40 per cent of contraceptive users rely on traditional methods. Modern contraceptive use is not as consistently high among the 42 low-fertility countries for which data are available. Thus, in nine low-fertility countries modern contraceptive prevalence is below 30 per cent, including Albania, Armenia, Azerbaijan, Bosnia and Herzegovina, Georgia, Maldives, Montenegro, Serbia and the former Yugoslav Republic of Macedonia. In addition, in 10 low-fertility countries, 40 per cent or more of contraceptive users still rely on traditional methods.

43. In almost all countries for which data on the mix of methods prevalent among contraceptive users are available, one or two methods seem to be favoured. In 59 per cent of the 173 countries with data on the mix of contraceptive methods used, two methods account for at least 60 per cent of overall contraceptive use. In addition, in about half of the countries considered, a single method accounts for at least 40 per cent of the contraceptives used. The main method used varies considerably among countries (see figure VII). Among the 63 low-fertility countries for which data are available, two modern and highly effective methods, the birth control pill and the intrauterine device (IUD), are the main methods used; the pill in 20 of the countries and the IUD in 14 of the countries. Two male-oriented methods (the condom and withdrawal) are dominant in the next tier of countries. Female sterilization comes next, and is the main method used in Brazil, Maldives and Puerto Rico. The rhythm method, injectables and male sterilization are the most used methods in Poland, Myanmar and Canada, respectively. In several low-fertility countries (including Albania, Bosnia and Herzegovina, Bulgaria, Greece, Japan, Malta and Serbia), the two most commonly used methods are the condom and withdrawal.

Figure VII
Number of countries by main contraceptive method in use



44. Modern contraceptive methods are the main methods used in the 54 intermediate-fertility countries for which data are available. The pill is the most used method in the largest number of intermediate-fertility countries (17), followed by the IUD and female sterilization, each being the main method in nine countries. Injectables and the male condom follow. Withdrawal is the most used method in Bahrain and Turkey, the group of other modern methods is dominant in Mexico and

Venezuela (Bolivarian Republic of), the rhythm method is preferred in Gabon and male sterilization is the main method in Bhutan.

45. There is slightly less variety in the main contraceptive methods used in high-fertility countries. Of the 56 high-fertility countries for which data are available, injectables are the preferred method of contraception in 19 countries and the pill is the main method used in 17 countries. The next most used contraceptive methods are the rhythm method (dominant in eight countries), female sterilization (a major method in five countries), other traditional methods (preferred in four countries) and the IUD (dominant in three countries). In countries where the dominant method is not highly effective, the second most used method generally is. Exceptions include Benin, Cameroon, the Congo, the Democratic Republic of the Congo and Togo, where the rhythm method is used most frequently, followed by the male condom and withdrawal.

46. Access to the widest possible range of safe and effective contraceptive methods is not yet a reality in many countries. In countries where users still rely heavily on methods that have high failure rates or where there is insufficient access to safe, long-term methods suitable for limiting the size of families, needs are not being met. Providing access to a wide range of contraceptive methods is especially important in order to reduce the chances that the use of certain contraceptives is discontinued. A study in eight countries found that between 14 and 58 per cent of women stopped taking the pill after a year, between 6 and 36 per cent of women stopped using the IUD, and between 18 and 68 per cent of women stopped using injectable contraceptives.[16] Discontinuation rates tend to be lower in countries where family planning service providers are proactive in introducing new contraceptives, such as the progestin-only pill, when there is a focus on counselling and follow-up and when appropriate referral services are available in cases of complications.

47. Despite the progress achieved in many countries in expanding access to contraceptives, wide disparities persist within countries, with the younger, poorer, less educated and rural segments of the population facing greater barriers to access to family planning services. Data for 64 developing countries indicate that major disparities in contraceptive use exist in all regions except Central Asia and that such disparities are especially marked in the high-fertility countries of sub-Saharan Africa.[17]

48. A useful indicator of the need for family planning services is the proportion of fecund women who are married or in a union and who wish to delay their next pregnancy or to stop childbearing altogether but are not using any method of contraception. Unmet need is typically low when the desired number of children is high, rises as the desired number of children drops and then falls as contraceptive use becomes widespread and equitably distributed. Unmet need tends to be low when contraceptive prevalence is high and vice versa. Among both low- and intermediate-fertility countries, unmet need is generally low, especially compared with contraceptive prevalence (see figure VIII). In contrast, unmet need is higher than contraceptive prevalence in 21 of the 36 high-fertility countries for which data

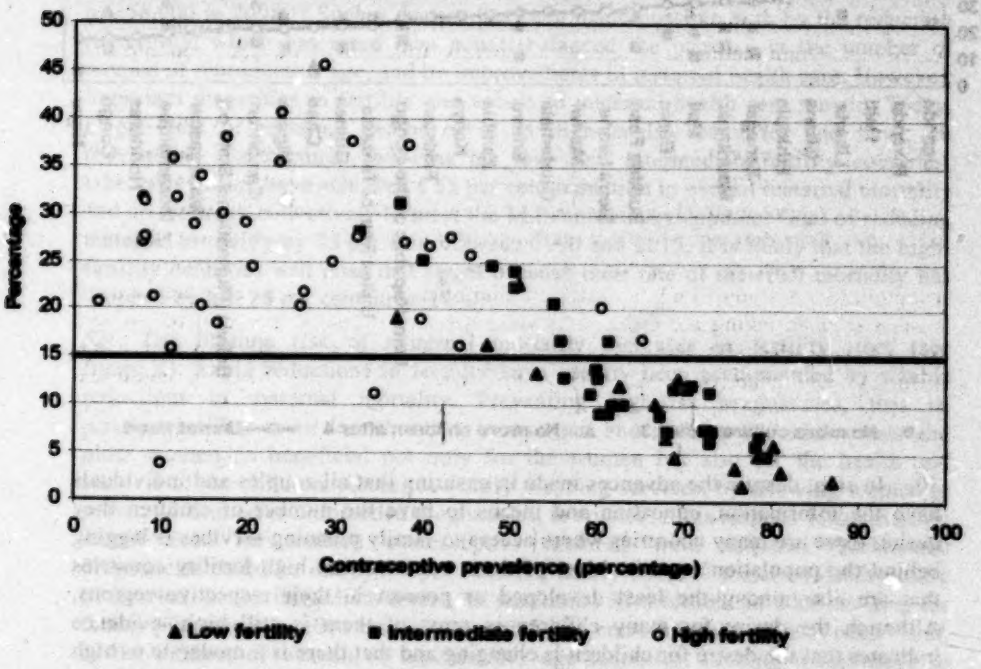
[16] Sarah Bradley and others, "Levels, trends, and reasons for contraceptive discontinuation", DHS Analytical Studies No. 20 (Calverton, Maryland, ICF Macro, 2009).

[17] Nuriye Ortayli and Shawn Malarcher, "Equity analysis: identifying who benefits from family planning programs", *Studies in Family Planning*, vol. 41, No. 2 (2010).

are available and in all but two of them (Solomon Islands and Timor-Leste), more than one in every six married women has an unmet need for family planning services. Similarly high levels of unmet need are reported by 9 of the 29 intermediate-fertility countries for which data are available and by 3 of 16 low-fertility countries (Azerbaijan, Georgia and Myanmar). In those 12 countries, unmet need ranges from 16 to 31 per cent, levels lower than those reported by the 11 high-fertility countries with the highest unmet need (30-46 per cent).

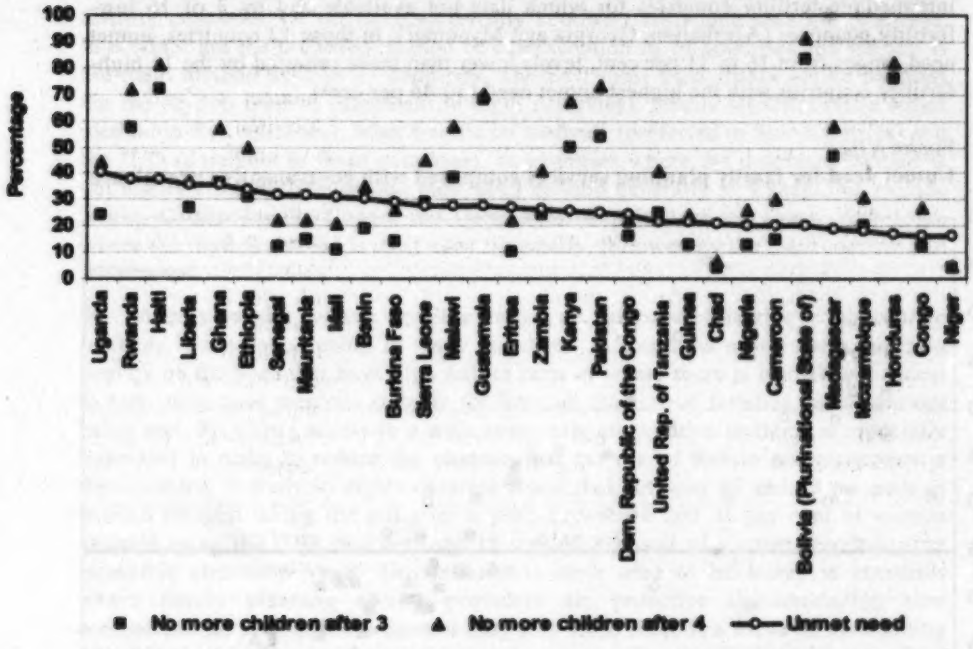
Figure VIII

Unmet need for family planning services compared with contraceptive prevalence



49. Unmet need is related to the desire for children, and in many high-fertility countries couples desire several children. However, the evidence suggests that desires are changing and that, in some high-fertility countries, the proportion of women wanting no more children after they have had three or four is high. As shown in figure IX, the level of unmet need in 22 of the 30 high-fertility countries considered is lower than the high percentages of women who desire no more children once they have had four. Nevertheless, there are still at least eight countries where 78 per cent or more of married women want to have more children after having had four. In those populations, satisfying the currently low unmet need for family planning services would be only the first step in the transition to lower fertility and would have to be buttressed by other strategies to change norms concerning the number of children desired.

Figure IX
Percentage of women not wishing to have more children by number of children they have and unmet need for family planning services, in high-fertility countries



50. In sum, despite the advances made in ensuring that all couples and individuals have the information, education and means to have the number of children they desire, there are many countries where access to family planning services is lagging behind the population's needs. Most of those countries are high-fertility countries that are also among the least developed or poorest in their respective regions. Although the desire for many children in most of them is still high, evidence indicates that the desire for children is changing and that there is a moderate to high unmet need for family planning services in most of those countries. Furthermore, unmet need remains moderate in a number of low- and intermediate-fertility countries, and in most countries very few contraceptive methods dominate, indicating that there is room for increasing the range of safe and effective methods available. A focus on improving access to a wide array of family planning methods is all the more urgent because, as is documented below, family planning is a cost-effective intervention for accelerating the achievement of the health-related Millennium Development Goals. In addition, to the extent that expanding access to family planning services sets in motion a process whereby smaller families provide more opportunities for each child and slower population growth allows greater investment in the young, it can make a major contribution to economic development.

VII. Maternal health

51. Ensuring maternal health is a global priority. In low-fertility countries, antenatal care is routinely provided to pregnant women and the probability of dying in childbirth is very low. In developing countries, especially in the high-fertility countries, many pregnant women still lack access to adequate maternal care and face a high risk of dying while giving birth. Globally, the number of women of reproductive age has increased from 1.3 billion in 1990 to 1.8 billion today and will keep rising. This increase alone should have driven up the number of maternal deaths,[18] yet the latest estimates show that they have declined from 545,000 in 1990 to 358,000 in 2008.[19] Such a decline has been made possible both by the reduction in fertility, which has more than counterbalanced the increase in the number of women of reproductive age, and by improvements in maternal health care. However, important disparities in fertility and access to maternal health care remain. Today, 65 per cent of maternal deaths occur in high-fertility countries and most are preventable. Furthermore, whereas the low- and intermediate-fertility countries, taken as a group, have achieved a 55 per cent reduction in overall maternal mortality and are on track collectively to meet the Millennium Development Goal of reducing maternal mortality by 75 per cent between 1990 and 2015, it is likely that the high-fertility countries will miss that target because their rate of maternal mortality has dropped by just 28 per cent since 1990.

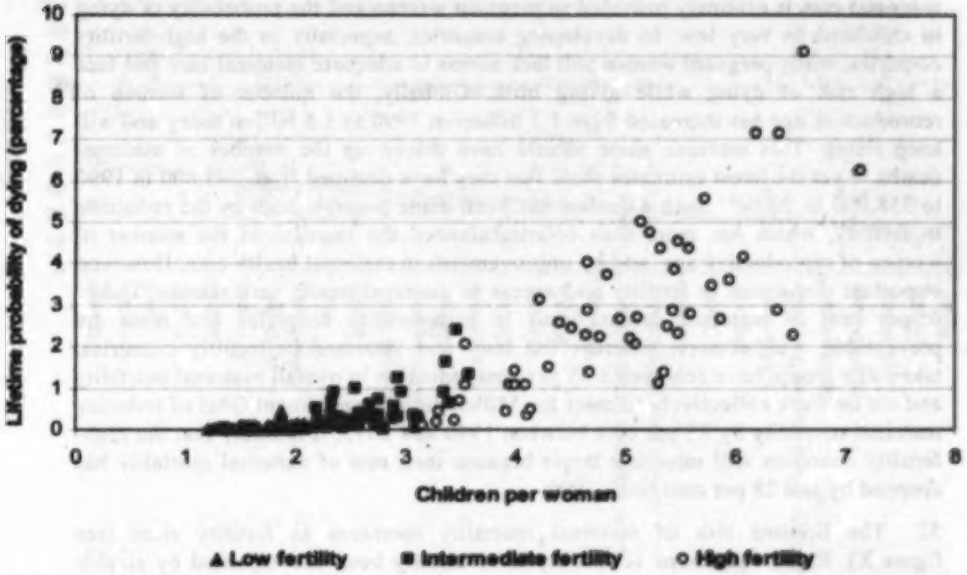
52. The lifetime risk of maternal mortality increases as fertility rises (see figure X). Rapid reductions in fertility have usually been accompanied by sizable reductions in maternal mortality. Preventing high-risk pregnancies, that is, pregnancies that occur less than two years apart and that involve adolescents and older women, is beneficial not only for the women but also for the health and survival of the children. Access to family planning services, by allowing women to prevent mistimed or unintended pregnancies, is crucial in this respect. If the existing unmet need for modern contraceptive methods were satisfied, unintended pregnancies could be cut by 71 per cent and nearly 100,000 maternal deaths could be averted. In the immediate future, an additional $3.6 billion (in 2008 dollars) for family planning is needed annually to satisfy the current level of unmet need[20] but, as the number of women of reproductive age increases, funding would have to increase.

[18] According to the World Health Organization, a maternal death is the death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management but not from accidental or incidental causes.

[19] *Trends in Maternal Mortality: 1990-2008* (Geneva, World Health Organization, 2010).

[20] Susheela Singh and others, *Adding it Up: The Costs and Benefits of Investing in Family Planning and Maternal and Newborn Health* (New York, Guttmacher Institute and United Nations Population Fund, 2009).

Figure X
Lifetime probability of dying from maternity-related causes in 2008 compared with total fertility in 2005-2010



53. Once women are pregnant, a continuum of care is necessary to ensure a safe delivery and the good health of mother and child. The World Health Organization (WHO) recommends a package of care for pregnant women that includes at least four antenatal visits to maternal care facilities, the attendance of skilled personnel at the delivery, the use of proper equipment and medications, the capacity to refer and transport women presenting complications to emergency obstetric services and post-natal follow-up and counselling. In many developing countries, especially those with high fertility rates, women lack adequate care during pregnancy and delivery.[21] From 2003 to 2008, only 34 per cent of pregnant women in rural areas and 67 per cent in urban areas benefited from four antenatal visits, and just 63 per cent of all pregnant women were attended to by skilled personnel at the time of delivery.[22] In sub-Saharan Africa, South Asia and Oceania, the percentages of women who were attended to by skilled personnel at delivery were even lower: 45, 46 and 57 per cent, respectively. Emergency obstetric care is even less easily available, with few countries in Africa or Asia performing the number of caesarean section operations that would be expected given the incidence of pregnancy-related complications. Moreover, in many countries, post-natal care is non-existent, depriving women of the opportunity to obtain important post-natal counselling on how to care for their newborn and on family planning. Poverty and lack of education are barriers to accessing adequate maternal and child care. Demographic and health surveys in 38 countries show that skilled birth attendants were available to less than 30 per cent of

[21] *Progress for Children: A Report Card on Maternal Mortality* (United Nations publication, Sales No. E.08.XX.16); *Tracking Progress in Maternal, Newborn and Child Survival: The 2008 Report* (New York, UNICEF, 2008).

[22] *The Millennium Development Goals Report 2010.*

women in the lowest wealth quintile, while such attendants were available to over 80 per cent of women in the highest wealth quintile.[23] Inequities associated with race, origin and other socio-economic factors have also been documented in developed countries.

54. The lack of appropriate obstetric services at delivery can lead to a number of disabling sequelae, including infertility, severe anaemia, uterine prolapse and vaginal fistula. An estimated 300 million women suffer from such sequelae, including at least 2 million women who suffer from untreated vaginal fistula.[24] Female genital mutilation or cutting increases the risk of complications at delivery. Anaemia, which affects 42 per cent of pregnant women and is often exacerbated by malaria, HIV infection and other conditions, increases the risk of haemorrhage, which was the cause of 35 per cent of maternal deaths from 1997 to 2007. Hypertensive disorders associated with pregnancy, complications from unsafe abortions and sepsis were the next most common causes of maternal mortality, accounting for 18, 9 and 8 per cent of deaths from 1997 to 2007, respectively.[25] Globally, 33 million women in developing countries are infertile because of complications arising from unsafe abortion and maternal sepsis. Along with the use of sanitary protocols, essential antibiotic medications and access to effective post-partum and post-abortion follow-up care are needed to reduce the rates of morbidity and mortality caused by sepsis and other infections.

55. It is estimated that providing pregnant women and their newborns with the recommended package of maternal and newborn care would cost $23 billion annually (in 2008 dollars). Satisfying the unmet need for modern contraception would increase costs by $3.6 billion but, by averting about 50 million pregnancies, it would reduce the cost of providing health care to mothers and newborns by $5.1 billion, thus saving $1.5 billion. Therefore, a simultaneous investment in family planning and health care would be more cost effective than investing in health care for mothers and newborns alone.

56. Improving maternal health also depends on eliminating gender-based discrimination and empowering women. Gender-based discrimination in communities and families restricts women's access to needed information and services related to sexual and reproductive health. Women are particularly vulnerable when gender-based violence is condoned. To combat such violence, Governments have been enacting legislation to protect women. As of 2006, 87 countries had passed legislation on domestic violence and had developed national plans of action to prevent such violence. In addition, at least 104 countries had criminalized marital rape and 90 had enacted laws on sexual harassment. As of 2008, 20 of the 37 countries where female genital mutilation or cutting was common had adopted laws making such practices a crime. While those developments are encouraging, much remains to be done to ensure that laws are enforced and that norms constraining the lives of women change.

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[23] *Countdown to 2015 Decade Report (2000-2010): Taking Stock of Maternal, Newborn and Child Survival* (Geneva, WHO and UNICEF, 2010).

[24] L. L. Wall, "Obstetric vesicovaginal fistula as an international public-health problem", *The Lancet*, vol. 368, No. 9542 (September 2006).

[25] *Countdown to 2015*.

Abortion

57. Abortion can be spontaneous or induced. Spontaneous abortion is frequent: between 13 and 20 per cent of recognized pregnancies end spontaneously in abortion.[26] The risk of a spontaneous abortion increases as the ages of the mother and father increase and with higher-order pregnancies. When a spontaneous abortion occurs after 22 weeks of gestation, it can be incomplete and require obstetric attention to prevent complications.

58. All but five countries allow abortions to be induced under certain conditions, the most common being to save the life of the mother. In addition, more than two thirds of all countries allow abortions in order to preserve the physical or mental health of the mother, half permit abortions in cases of foetal impairment and 37 per cent permit them for economic and social reasons. Only one third of all countries permit abortions on demand, including 43 low-fertility countries, 13 intermediate-fertility countries and 1 high-fertility country.

59. Because most spontaneous abortions cause no complications and induced abortion is generally allowed only on restricted grounds, there are no reliable statistics on the overall occurrence of abortion at the regional and global levels. Nevertheless, it is estimated that between 1995 and 2003 the number of induced abortions dropped from 46 million to 42 million, implying that the rate of abortion per 1,000 women aged 15-44 declined from 35 to 29.[27]

60. When abortion procedures are performed by qualified health professionals using appropriate techniques and sanitary protocols, the risk of death or injury from elective abortion is low.[28] WHO estimates that, in 2008, 22 million unsafe abortions took place: 13 per cent in low-fertility countries, 52 per cent in intermediate-fertility countries and 35 per cent in high-fertility countries. The rates of unsafe abortion were 4 per 1,000 women aged 15-44 in low-fertility countries, 18 per 1,000 in intermediate-fertility countries and 31 per 1,000 in high-fertility countries.

61. The key to reducing the incidence of unsafe abortions is to avert unintended pregnancies. Satisfying the unmet need for family planning is an essential step in that direction. In addition, when complications from abortions arise, access to appropriate post-abortion care should be provided. In circumstances where abortion is not against the law, it should be made safe. In all cases, post-abortion care should include counselling, education and family planning services so that repeat abortions can be prevented.

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[26] John Bongaarts and Robert G. Potter, *Fertility, Biology and Behavior: Analysis of the Proximate Determinants* (San Diego, California, Academic Press Inc., 1983); Marilyn K. Goldhaber and Bruce H. Fireman, "The fetal life table revisited: spontaneous abortion rates in three Kaiser Permanente cohorts", *Epidemiology*, vol. 2, No. 1 (1991).

[27] Gilda Sedgh and others, "Induced abortion: estimated rates and trends worldwide", *The Lancet*, vol. 370, No. 9595 (October 2007).

[28] Elisabeth Ahman and others, "The global burden of unsafe abortion in the year 2000", in *Global Burden of Disease 2000* (Geneva, WHO, 2003).

VIII. Other aspects of reproductive health

A. HIV/AIDS

62. In 2009, 33.3 million[29] people were living with HIV: 15 per cent in low-fertility countries, 39 per cent in intermediate-fertility countries and 46 per cent in high-fertility countries. HIV prevalence was 0.2 per cent in low-fertility countries, 0.7 per cent in intermediate-fertility countries and 2.3 per cent in high-fertility countries. The latter group included 20 of the 29 countries with an HIV prevalence of 2.0 per cent or higher. Among the 2.6 million new infections occurring in 2009, 52 per cent occurred in high-fertility countries. Globally, an estimated 5.8 per cent of maternal deaths were caused by HIV/AIDS.

63. Despite the important progress made in expanding treatment with antiretroviral therapy, in 2009 such therapy was available to fewer than 40 per cent of those who needed it in about half of the low-fertility countries and half of the high-fertility countries with prevalence levels of at least 0.1 per cent. In intermediate-fertility countries with similar levels of prevalence the situation was better, with antiretroviral therapy coverage being below 40 per cent in just about a fifth of those countries. By the end of 2009, 5.2 million people were receiving antiretroviral therapy in low- and middle-income countries, a 12-fold increase since 2003. Yet, despite that increase, only one third of people who require antiretroviral therapy are receiving it. Furthermore, for every person starting such therapy in 2009, two were newly infected. It is urgent, therefore, to focus efforts on prevention.

64. There are signs that prevention is working. Among the 21 countries most affected by HIV, 15 have achieved a 25 per cent reduction in HIV prevalence among people aged 15-24.[30] Developments in prevention technology, such as the microbicide gel containing the antiretroviral agent tenofovir, offer women a means of reducing the risk of infection.[31] For men, circumcision offers substantial although not absolute protection, and several Governments in Africa are supporting circumcision as part of a comprehensive HIV/AIDS prevention programme.[32] To yield the best results, prevention strategies need to focus interventions on the groups most at risk of infection. Even in generalized epidemics, much can be gained by focusing on high-risk groups that are key foci of infection, including sex workers and injecting drug users. Yet funding for such interventions has been low. In addition, in some countries, the majority of new infections are occurring among persons over the age of 25, who are not covered by the typical prevention programmes focusing on youth.

65. A comprehensive approach to reducing HIV infection in children involves preventing infection in women, averting unintended pregnancies in women living with HIV and preventing mother-to-child transmission. In 2009, 53 per cent of pregnant women living with HIV received antiretrovirals to prevent the transmission

[29] *Global Report: UNAIDS Report on the Global AIDS Epidemic 2010* (Geneva, Joint United Nations Programme on HIV/AIDS (UNAIDS), 2010).

[30] "Young people are leading the HIV prevention revolution" (Geneva, UNAIDS, 2010). Available from http://data.unaids.org/pub/Outlook/2010/20100713_outlook_youngpeople_en.pdf.

[31] Q. A. Karim and others, "Effectiveness and safety of tenofovir gel, an antiretroviral microbicide, for the prevention of HIV infection in women", *Science*, vol. 329, No. 5996 (2010).

[32] *Progress in Male Circumcision Scale-Up: Country Implementation and Research Update* (Geneva, WHO and UNAIDS, 2010).

of HIV to the infants.[33] New guidelines issued by WHO in 2010 suggest that antiretroviral therapy should be started earlier on in pregnancy than it used to be and that it should be continued while breastfeeding to protect the infant from infection.

66. The integration of HIV prevention services, including voluntary counselling and testing, with sexual and reproductive health-care services can increase voluntary screening for HIV, improve understanding of the risks of contracting HIV and other sexually transmitted infections and increase condom use.

67. In 2009, 87 per cent of Governments still considered HIV/AIDS to be a major concern and 91 per cent — 98 per cent in developed countries and 89 per cent in developing countries — had programmes to provide antiretroviral therapy. In addition, 97 per cent of Governments reported screening national blood supplies and blood products for HIV and 86 per cent promoted condom use to protect against the sexual transmission of HIV. Nevertheless, the global supply of condoms still falls short of what is needed to ensure adequate protection for the sexually active population,[34] and poor condom quality remains a concern.

68. Protection from discrimination against people living with HIV is not yet universal. In 2009, just 65 per cent of developed countries and 55 per cent of developing countries had laws prohibiting such discrimination. Furthermore, in 2009, 23 of the 52 countries experiencing a generalized epidemic still did not have legal provisions prohibiting AIDS-related discrimination.

B. Reproductive tract infections

69. Reproductive-tract infections can be sexually transmitted, caused by organisms normally present in the reproductive tract or contracted through medical procedures. More than 30 bacterial, viral and parasitic pathogens are sexually transmissible.[35] Each year an estimated 340 million new cases of the most common and curable sexually transmitted infections — including syphilis, gonorrhoea, chlamydia and trichomoniasis — occur among people aged 15-49.[36] The incidence of viral sexually transmitted infections such as the human papilloma viruses (HPV), the human herpes viruses and the hepatitis B virus, for which there is as yet no cure, is likely to be twice as high as that of the curable sexually transmitted infections.[37] Infections by the herpes simplex virus type 2 and by HPV are widespread, and HPV infection is the most common of all viral reproductive-tract infections. The burden of disease associated with sexually transmitted infections is expected to increase globally given the high prevalence of incurable sexually transmitted infections caused by viruses, trends in sexual behaviour and increased travel.

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[33] *Towards Universal Access: Scaling-up Priority HIV/AIDS Interventions in the Health Sector, Progress Report 2010* (Geneva, WHO, UNICEF and UNAIDS, 2010).

[34] *Donor Support for Contraceptives and Condoms for STI/HIV Prevention 2008* (New York, UNFPA, 2009).

[35] *Global Strategy for the Prevention and Control of Sexually Transmitted Infections: 2006-2015* (Geneva, WHO, 2007).

[36] *Global Prevalence and Incidence of Selected Curable Sexually Transmitted Infections: Overview and Estimates* (Geneva, WHO, 2001).

[37] *Sexually Transmitted and Other Reproductive Tract Infections: A Guide to Essential Practice* (Geneva, WHO, 2005).

70. Within countries, the prevalence of sexually transmitted infections varies widely. In general, men and women residing in urban areas, unmarried individuals and young adults face the greatest risk of acquiring such infections. Most sexually transmitted infections produce no symptoms at first but can be transmitted to a sexual partner. Hence, screening for sexually transmitted infections should be a routine component of primary reproductive health care in order to detect infection, provide information on how to avoid further transmission, provide treatment and prevent serious complications. Women with untreated reproductive-tract infections are at higher risk of developing pelvic inflammatory disease or cervical cancer (if infected with HPV) and face a heightened risk of infertility, ectopic pregnancy, spontaneous abortion or stillbirth. Babies born to mothers with untreated infections are vulnerable to congenital syphilis, pneumonia, prematurity, low birth weight or blindness. In men, serious complications from sexually transmitted infections include chronic infection, pain and infertility. The treatment and control of sexually transmitted infections also deserve priority because of their role in HIV transmission: ulcerative infections, such as the herpes simplex virus type 2, chancroid or syphilis, triple or quadruple the effectiveness of HIV transmission.

C. Cancers of the reproductive system

71. Cancers of the reproductive system cause an estimated 1.3 million deaths each year.[38] Among women, the most common are cancers of the breast, cervix, ovaries and uterus. Each year there are 1.1 million new cases of breast cancer, leading to 520,000 deaths annually. Early diagnosis is critical for the successful treatment of breast cancer. Screening by mammography plus follow-up of individuals with positive or suspicious findings can reduce mortality from breast cancer by up to one third among women aged 50-69.[39] However, the cost of mammography and the skilled personnel required to interpret the results make it difficult to provide universal screening in low-income settings. It is therefore important to target the population most at risk of developing breast cancer in terms of age, relevant risk factors and family history.

72. Cervical cancer affects nearly 500,000 women and causes 260,000 deaths annually. It is the most common cancer among women in developing countries. Most cases of cervical cancer are diagnosed in women under the age of 40 and virtually all cases are linked to HPV infection. The most effective way to prevent morbidity and mortality from cervical cancer is to screen for and treat precancerous abnormalities of the cervix. Well-organized detection and treatment programmes can prevent 80 per cent of cervical cancer cases.[40] However, instituting such screening programmes in low-resource settings has proved difficult, which is why cervical cancer mortality continues to be high in low-income countries.[41] The development of two vaccines against HPV infection, licensed in 2006 and 2007, bodes well for the prevention of cervical cancer. The vaccines are most effective when administered to pre-teens and adolescents before they start being sexually active.

[38] *The Global Burden of Disease: 2004 Update* (Geneva, WHO, 2008).

[39] *World Cancer Report 2008* (Lyon, France, International Agency for Research on Cancer, 2008).

[40] WHO, "Human papillomavirus vaccines: WHO position paper", *Weekly Epidemiological Record*, vol. 84, No. 15 (2009) pp. 117-132.

[41] *Cervical Cancer Screening in Developing Countries: Report of a WHO Consultation* (Geneva, WHO, 2002).

WHO recommends that routine HPV vaccination be included in national immunization programmes in countries with high rates of cervical cancer. By the end of 2009, only 27 countries had introduced an HPV vaccine in their national immunization schedules.[42]

73. Among men, prostate cancer is the most common cancer of the reproductive system. Annually, 605,000 new cases are detected and 308,000 deaths are caused by prostate cancer. Three quarters of those deaths occur among men aged 70 and above. Several screening tests for prostate cancer are available, but the one most used is the prostate-specific antigen test. Nonetheless, it is not clear whether routine screening leads to reductions in mortality, given that prostate cancer develops slowly and, with advanced age, latent prostate cancers are common. Furthermore, the kinds of treatment available carry substantial risks of side effects that can be worse than the disease itself.[43]

74. Among women, the age-standardized mortality rates, measured in deaths from cancers of the reproductive system per 100,000 women, tend to be higher in high-fertility countries than in either low- or intermediate-fertility countries. Thus, whereas over 50 per cent or more of low- and intermediate-fertility countries have age-standardized mortality rates of 39 or fewer deaths per 100,000 women, three quarters of high-fertility countries have age-standardized mortality rates of 39 or more deaths per 100,000. Among men, the differences in age-standardized mortality rates from prostate cancer between the three groups of countries are not as clear cut.

IX. Conclusions and recommendations

75. Reductions in fertility have beneficial effects at the individual, family and national levels. Complemented by the right economic policies, a decline in fertility can contribute to economic growth. Since 1970, fertility has decreased in virtually all countries but the start and speed of that decline has varied considerably among countries so that, today, fertility levels vary widely. Many countries where fertility has declined significantly have benefited because having fewer children has made it possible to invest more in productive activities and in the education and health of the young. As a result, those countries have achieved significant advances in many development indicators. In contrast, countries where fertility has declined slowly and is still high have lagged behind in terms of development indicators.

76. By focusing on the diverse experiences and characteristics of low-fertility, intermediate-fertility and high-fertility countries, the information contained in the present report has shown that high-fertility countries tend to score poorly in most outcomes related to reproductive health and the determinants of fertility. Although all countries face challenges in ensuring access to reproductive health for all, the challenges confronting high-fertility countries are more daunting, partly because of the rapid population growth they are still

[42] *Report of the Meeting on HPV Vaccine Coverage and Impact Monitoring, 16-17 November 2009* (Geneva, WHO, 2010).

[43] Peter Davidson and John Gabbay, "Should mass screening for prostate cancer be introduced at the national level?" (Copenhagen, WHO Regional Office for Europe, 2004).

experiencing. In fact, unless fertility declines more quickly, the challenges associated with rapid population growth will only multiply.

77. Mindful of these challenges, the Secretary-General launched in 2010 the Global Strategy for Women's and Children's Health in order to energize action to achieve Millennium Development Goal 5 by 2015. As the present report documents, key strategies for meeting that goal are well known and have been tested. However, those strategies have not been implemented with the priority they deserve and Government promises have not been followed up with the necessary funding and action.

78. Ensuring access to modern methods of family planning to all those who need them is an effective means of improving the health of mothers and infants and key to ensuring that people have the means to exercise their reproductive rights. Furthermore, by preventing unintended pregnancies, family planning can ultimately reduce the overall cost of providing health-care services to mothers and newborns. Yet, funding for family planning has not kept pace with need. Donor funding, in particular, last peaked in 2002 at $700 million and has since declined to about $400 million. Given the increase in the number of women of reproductive age, per capita donor funding for family planning has declined by more than 50 per cent since 1995 in virtually all recipient countries. At the same time, overall development assistance for health has tripled. It is urgent, therefore, to raise funding levels, especially if the additional $3.6 billion needed annually to satisfy the unmet need for family planning is to be secured.

79. In the Programme of Action of the International Conference on Population and Development it was envisaged that only one third of the cost of providing reproductive health services would be borne by donors, so the bulk of funding, including funding for family planning, has to come from Governments. Competing priorities, especially in low-income countries, impinge negatively on funding for reproductive health. Change in this regard requires a decisive commitment from national Governments to accord priority to reproductive health, including its family-planning component. Incorporating reproductive health indicators in national planning instruments, such as poverty reduction strategy papers, would be a tangible recognition of their importance for development.

80. Strengthening health systems is essential for achieving sexual and reproductive health for all. Sexual and reproductive health-care services should be an integral part of the minimum health-care package offered at all levels of the health-care system but particularly under primary care. In order to reach low-income groups and other marginalized communities, legal, financial and cultural obstacles that prevent or limit access to sexual and reproductive health-care services should be removed.

81. To increase effectiveness in the delivery of health-care services, an integrated approach to sexual and reproductive health care is recommended. The core service package provided under primary care should include contraceptive counselling, services and supplies; the recommended health-care package during pregnancy and childbirth (see para. 53); antiretroviral therapy for pregnant women living with HIV; access to safe abortions where abortion is legal; prevention, screening and treatment for sexually transmitted infections and reproductive cancers; voluntary testing and counselling for HIV and

referrals for treatment; and screening for and counselling on gender-based violence, including the active discouragement of harmful practices. The health-care system should develop strategies to reach out to men, women who are not pregnant and adolescents in order to raise their awareness about the health-care support offered and to promote responsible sexual and reproductive behaviour.

82. The availability of affordable and high-quality contraceptive commodities is essential for the achievement of universal access to reproductive health-care services. In recent years, donor funding to support access to commodities in developing countries has ranged from $205 million to $239 million annually. Given the expected increase in the number of people of reproductive age, donor funding earmarked for commodities would have to double by 2015 to meet projected demand.

83. A rights-based approach to sexual and reproductive health implies that Governments should be proactive in ensuring the exercise of rights, including reproductive rights, without discrimination, and in prohibiting harmful practices, including all types of gender-based violence. Adopting laws and regulations is only the first step; enforcing them and monitoring their outcomes are also necessary. Measures that contribute to empowering women are of special importance. In particular, Governments should enforce laws establishing a minimum age at marriage and ensure that marriage occurs only with the free and full consent of the intending spouses.

84. Because the enjoyment of rights often involves a change in social norms, Governments need to inform, educate and convince people of the benefits of such changes. In addressing the social determinants of poor sexual and reproductive health, a participatory process that involves communities in a meaningful way has proven useful. So has the implementation of programmes that provide information on reproductive health and rights while at the same time empowering women through education and the development of skills.

85. Men need to be involved in promoting sexual and reproductive health, both on their own behalf and as responsible partners to women. Promoting equitable relations between husband and wife and mutual responsibility for the prevention of unintended pregnancy and improving communication between men and women are strategies for increasing the engagement of men.

86. Adolescents need guidance to understand what responsible sexual and reproductive behaviour entails. Programmes on sexuality education and HIV prevention have helped young people to refrain from engaging in risky sexual behaviour and deserve support.

87. In the 1960s, leaders the world over became aware of the challenges that rapid population growth would pose and their first action was to recognize that people had the right to decide freely and responsibly the number and spacing of their children. Concern about the implications that continued population growth would have for long-term sustainability brought about the 1974 World Population Conference, which, despite much debate, launched a period of strong national and international action to reduce population growth by providing couples and individuals with the information and means to have the children they desired. As a result, both fertility and population growth rates

have declined markedly in most countries. Such success has bred complacency: population growth is no longer perceived as a pressing issue. Yet, as shown in the report of the Secretary-General on world demographic trends (E/CN.9/2011/6), the challenges posed by population growth might have been deferred but have not yet disappeared. Fortunately, the experience accumulated over the past four decades shows that the strategy to reduce those challenges depends on ensuring the sexual and reproductive health of all, a goal whose benefits for women, children, their families and future generations is widely recognized. For that reason, achieving that goal deserves higher priority than it has been accorded so far at both the national and international levels.